

# Franco-British Lawyers Society

## Cardiff Colloquium, 2008

### **Cars and Environment – regulating for CO<sub>2</sub> reduction**

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# Cars - History of Regulatory Concerns

**Crankcase emissions (1950s)**

**tailpipe emissions (60s-00s)**

**VOC emissions (80s-00s)**

**CO2 emissions (90s-00s)**

**sustainable development (90s-00s)**

**sustainability/LCA (90s-00s)**

# EU regulation

- 1993/4: **Euro 1** (Directive 91/441/EEC)
- 1996/7: **Euro 2** - further **tightening**
- 2000/1: **Euro 3** (+auto-oil) - EU in line with US Federal standards
- 2005: **Euro 4** (+auto-oil) - EU moves beyond US
- 2009/11: **Euro 5**
- 2014/15: **Euro 6**

# Attempt at global harmonisation: Bellagio Principles

*Meeting of top regulators from significant automotive countries who agreed a set of common principles for future regulation*

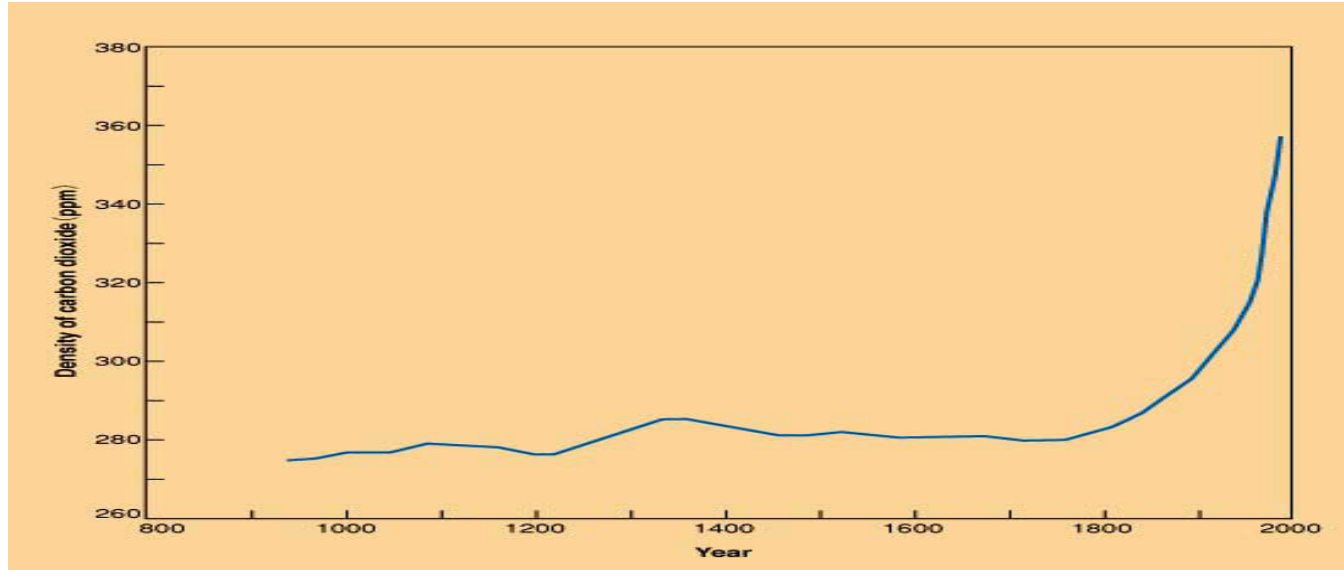
# Getting EU industry support for regulation: Cars21

“A Competitive Automotive Regulatory System for the 21<sup>st</sup> century”

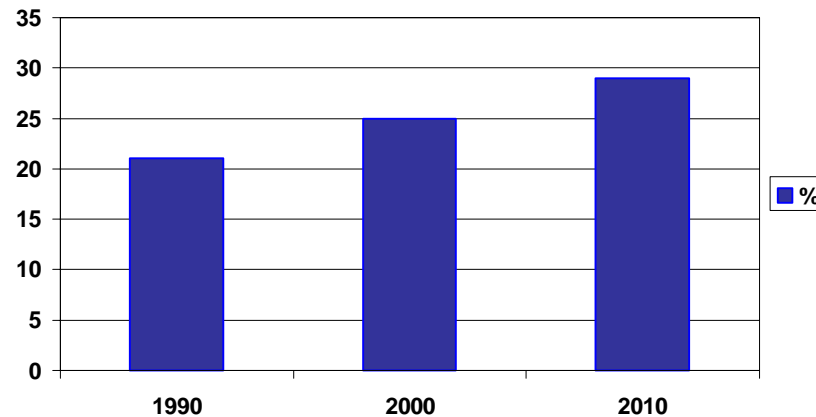
- Developed by the European commission (DG Enterprise) with automotive stakeholders (e.g. ACEA)
- Introduces the ‘**Integrated approach**’ – moving on vehicle and fuel standards (industry) together with regulation and consumer incentives (government)

# CO<sub>2</sub>

- Carbon dioxide has been identified as a contributor to the **greenhouse** effect
- human activity is speeding up the release of fossil carbon and hence upsetting the natural carbon cycle (*IPCC - Intergovernmental Panel on Climate Change, 1996*)



# Transport CO2 (% of total):



- Cars represent about 14% of total EU CO2 emissions
- Oil imports for car = €140bn/yr
- Value added of EU car, truck and LCV industry = €132 bn in 2005

# How do you reduce CO2?

- Improve **fuel consumption** - increase powertrain efficiency; reduce weight
- use non-carbon or lower-carbon **alternative fuels** (e.g. H<sub>2</sub>; CNG, LPG)
- use **carbon-neutral** fuels (e.g. ethanol, biodiesel)
- **reduce** total miles driven (e.g. London Congestion Charge)

Regulation, self-regulation or relying on 'the market'?



# Regulation works: CO2 and company cars; the UK Experience

## Case study

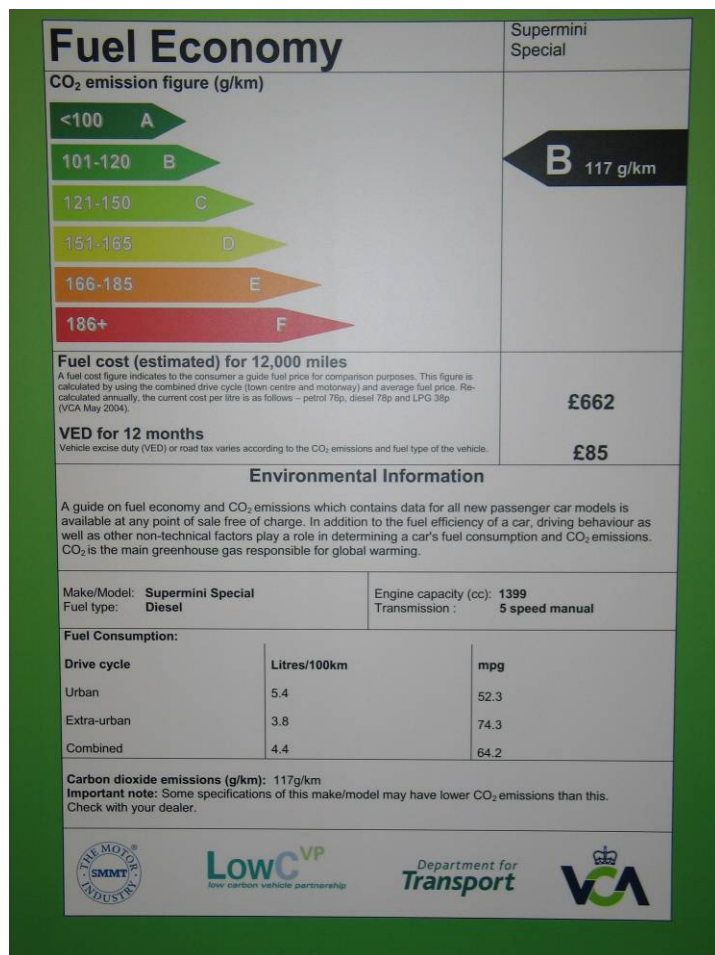
# UK

- CO<sub>2</sub>-based road tax regime
- CO<sub>2</sub>-based company car taxation system
- Incentives for alternative fuel vehicles
- Fuel price escalator (dropped 2000)

# CO2 and Company Cars

- All cars are classed in bands of CO2 emissions
- Personal tax liability for the car as 'benefit in kind' is also levied in bands related to these CO2 categories
- Between 50% and 70% of new car sales in UK can be classed as 'company' cars > controlling these will rapidly affect the parc as a whole

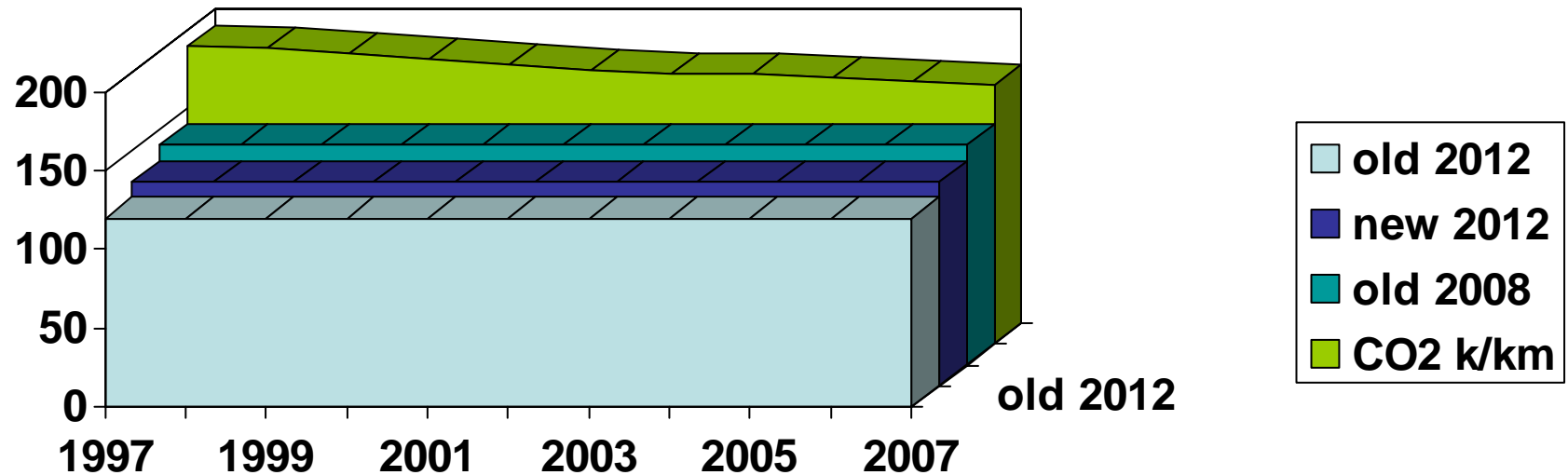
# Consumer info (UK)



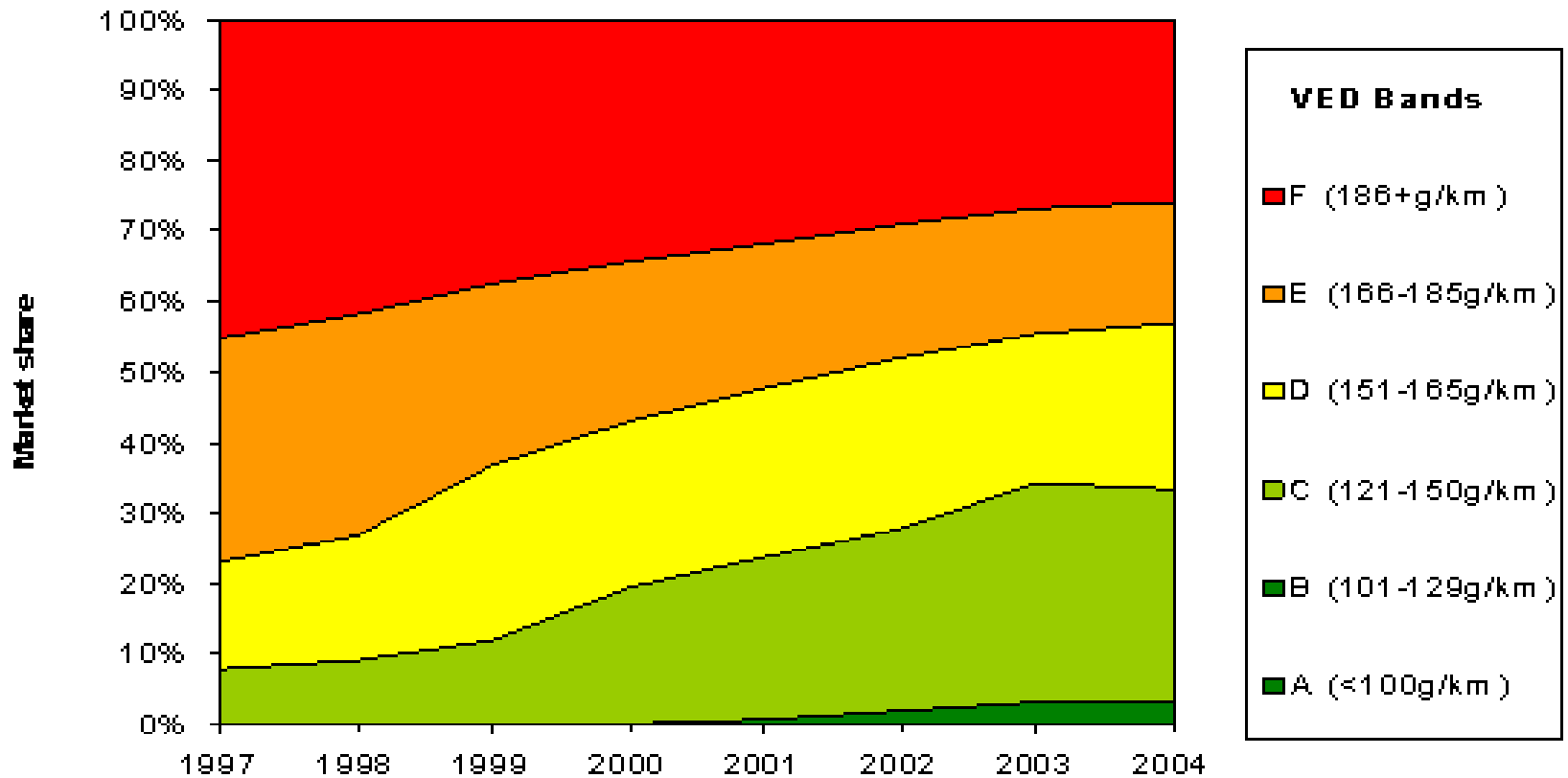
- In response to EU directive
- Based on existing system for white goods
- Based primarily on CO<sub>2</sub> emissions
- CO<sub>2</sub> emissions for each car available in UK is also listed in car magazines

# UK new car CO2 emissions 1997-2007

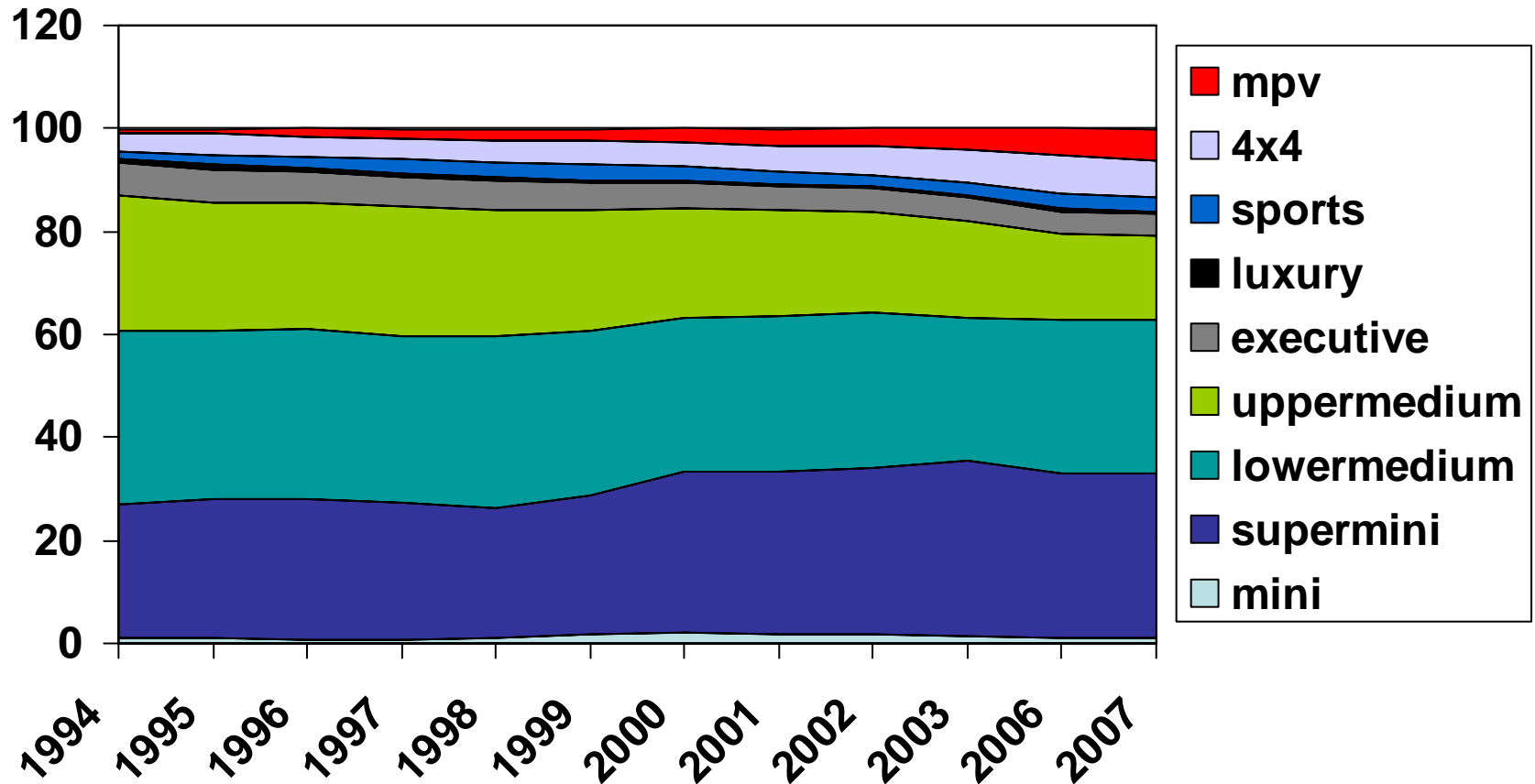
(source: SMMT)



# UK CO2 performance by band



# Market effects: UK Segmentation change 1994-2007



# 130 g/km?

February 2007: EU Commission, DG Environment proposes introduction of regulation to reduce new car emissions to average of 130g/km by 2012.



# EU CO2 Regulation History

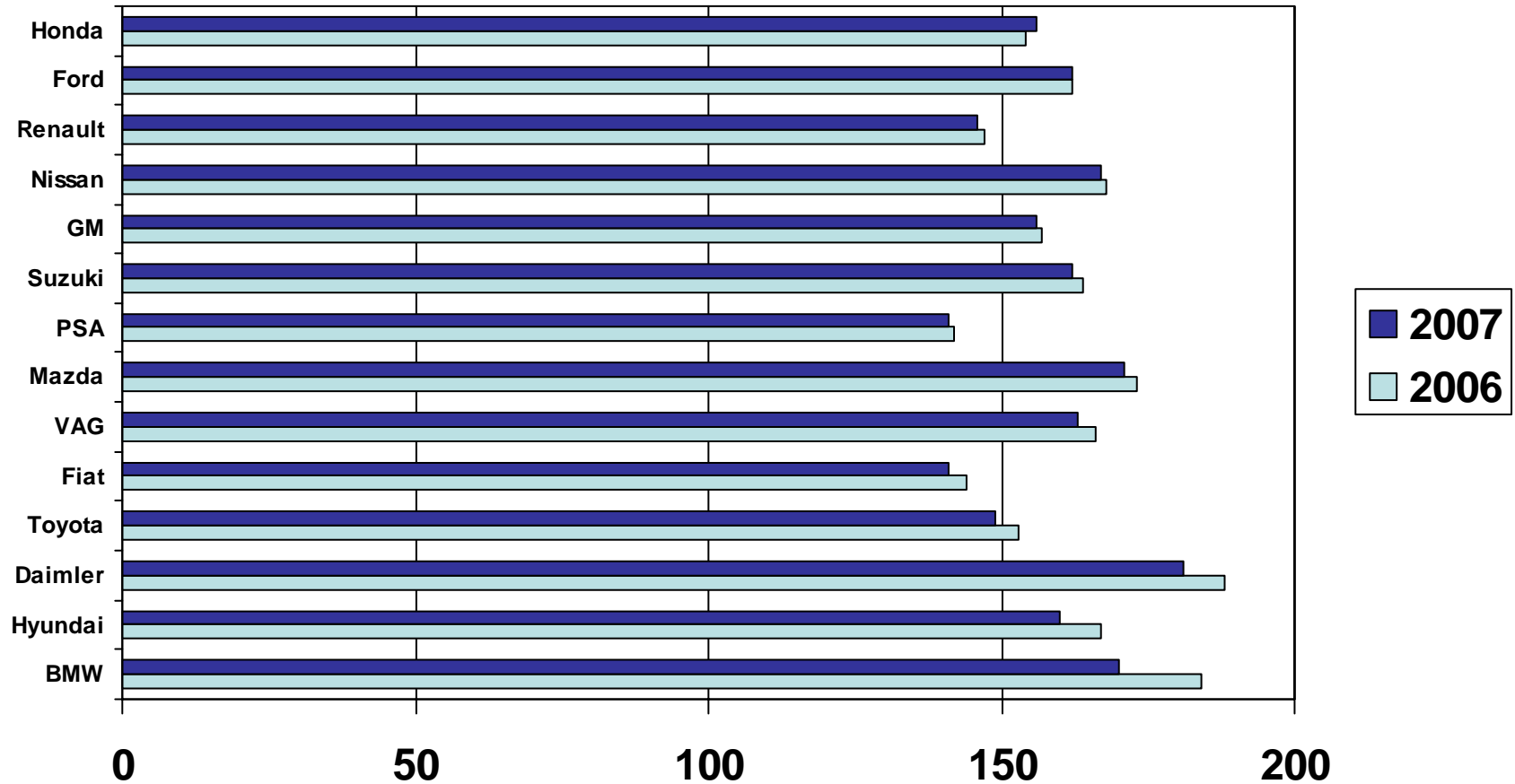
- **1994**: proposal by then German environment minister *Angela Merkel* for 120g/km; Target date set for 2005
- **1996**: target date moved to 2010
- **1998**: *voluntary agreement*. 140 g/km by 2008, 120 g/km moved to 2012
- **2007**: 2012 target changed to 130 g/km
- **2007**: *weight-based* targets per manufacturer
- **2007**: *penalty* system proposed
- **1/9/2008**: EU parliament industry committee votes to postpone deadline to 2015
- **3/9/2008**: EU parliament environment committee votes for increasing penalties and speeding up phase-in

130 g/km is not rocket science;  
 <you can buy several 130 g/km cars today

Manufacturer	Models	CO2 (g/km)
BMW	116, MINI Cooper D	118-122
Citroen & Peugeot (PSA)	C1, C2, C3, C4, 1007, 107, 207, 206, 307	109-129
Fiat	Panda, Grande Punto	114-122
Ford	Fiesta, Focus, Focus C-Max	114-129
Honda	Jazz, Civic Hybrid	109-129
Hyundai-Kia	Amica, Picanto, Rio, Cerato	121-129
Mazda	2, 3	124-128
Mercedes-Benz, Smart	A-class, For2, For4, Roadster	90-128
Mitsubishi	Colt	126
Renault & Nissan	Clio, Modus, Megane, Micra	115-126
Opel-Vauxhall	Corsa	124
Toyota-Daihatsu	Aygo, Yaris, Prius, Charade, Sirion	104-127
VAG	Polo, Fabia	124-127
Volvo	C30 1.6d, S40 1.6d	129

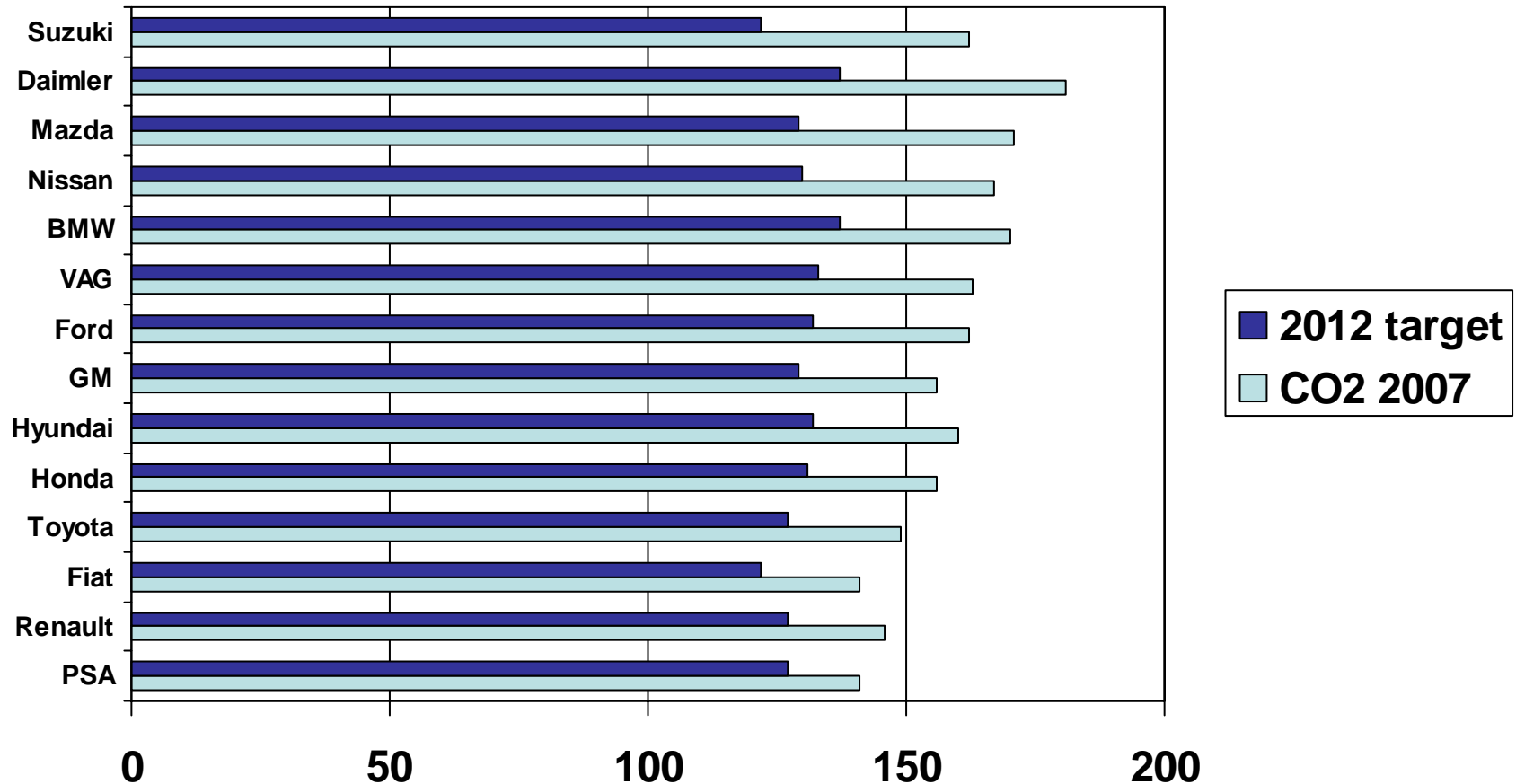
# Effect of the *threat* of legislation: Progress by car maker 2006-2007

(source: T&E)



# Distance to proposed target

(source: T&E)



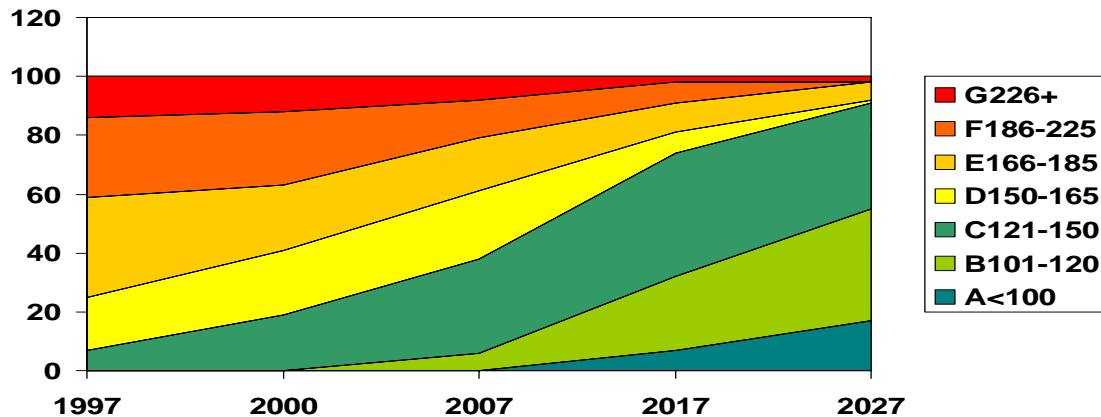
# This legislation has the potential to transform the car industry

## The problem of averages:

- For every car/SUV that exceeds the average by some margin several very low CO2 vehicles have to be sold
- A split will occur between smaller cars which can comply with little or no change and larger cars which need expensive new technologies to come anywhere near the average



# Possible market impact of 130 g/km from 2012



- Vehicles currently in Bands D and E can mostly be adapted to meet requirements for band C, hence these segments will be squeezed
- Band F will disappear, but G will survive to accommodate the few remaining 'gas guzzlers', together with the smaller bands D and E.
- New product will be developed for bands A and B. Band A will see new plug-in-hybrids and very light-weight IC vehicles

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END

